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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/994,659	11/28/2001	Manabu Kagami	P 284170 T36-137764M/KOH	8435

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EXAMINER
ANGEBRANNDT, MARTIN J

ART UNIT	PAPER NUMBER
1756	

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DATE MAILED: 02/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/994,659	Applicant(s) KAGAMI ET AL.
	Examiner Martin J Angebranndt	Art Unit 1756

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 November 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-39* is/are pending in the application.

4a) Of the above claim(s) *29-34* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28 and 35-39* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) *1-39* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

1. The response of the applicant ahs been read and given careful consideration. The examiner notes that the applicant has indicated in the claims that claims 29-34 are withdrawn and holds this a constructive assent to the election as no arguments concerning the propriety of the restriction are of record. The restriction is made final. Responses to the arguments of the applicant are provided after the first rejection to which they are directed. The rejection based upon JP 08-320422 and Anderson 702 alone is withdrawn based upon the different curing mechanisms now recited in the claims.

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-28 and 35-39, drawn to methods of forming waveguiding devices using selective photoprocessing, classified in class 430, subclass 321.

II. Claims 29-34, drawn to an optical transmission and reception module with electro-optical conversion, classified in class 385, subclass 49.

The inventions are distinct, each from the other because of the following reasons:

3. Inventions group I and group II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the products made need not include electro-optical conversion and/or the products may be made without photocuring means.

4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification and their recognized divergent subject matter, restriction for examination purposes as indicated is proper.During a telephone

conversation with Sean McGinn on July 31, 2003 a provisional election was made without traverse to prosecute the invention of group I, claims 1-28 and 35-37. Affirmation of this election must be made by applicant in replying to this Office action. Claims 29-34 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 35-37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 35, the "entering" step should introduce a **second light beam** of a predetermined wavelength as the beams are in different places and vectors/directions and should indicate that it cures the photosetting resin. **The applicant points to figures 18A-E to support an assertion that the limitation ned not be recited because embodiments outside that scope are disclosed. The applicant should pay close attention to figures 18C and 18D and the corresponding text in sections [0216-0219] of the prepub of the instant application which describes the**

beam "LB2" as inputted into the fiber [0217] and curing/hardening the solution [0219].

Therefore the rejection stands.

In claims 38 and 39, the applicant should replace "acryloyl radical" with - - acrylate- - and "metacryloyl radical" with - - methacrylate- - . The radicals are not produced until polymerization is initiated, so it is more proper to describe the moiety. (ie. The radiacals are transient species and not the monomer found in solution.) Also in the specification "meta" should be replaced with - - metha- -. These were likely translational errors.

In claims 38 and 39, "oxetane" should be replaced by - - oxirane - - . This is the correct name for that ring (see Hackh's citation on page 481). Please correct this in the specification as well. These were likely translational errors.

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 1-28 and 38-39 are rejected under 35 U.S.C. 102(a) as being fully anticipated by Kagami et al. JP 2000-347043.

Kagami et al. JP 2000-347043 (different inventive entity from instant application) teaches dipping an optical fiber into a solution of a mixture of photocurable monomers, irradiating the solution through the fiber with a first wavelength to selectively cure one of the monomers and form a waveguiding core (figures 3 a-c), followed by irradiating uniformly from the sides with a second wavelength to form a cladding (figure 3d) [0039-0040] and example 1 [0032]. The formation of step index waveguides is disclosed with respect to figure 4 [0041]. The formation of graded waveguides is disclosed with respect to figure 6 [0048]. Formulae describing the propagation of the light as a function of the refractive indices appear throughout the reference (and the machine translation thereof accompanying this action). The use of an **acrylic monomer** system (free radical) and an **epoxy monomer** system (cationic) is clearly disclosed [0034]. The acrylic monomer (A) is disclosed as having a higher sensitivity than the epoxy (B) monomer in figure 2 and wavelength 1 is shown to be shorter than the longest wavelength able to cure monomer A, but longer than that able to cure monomer B.

The applicant argues that the selective use of free-radical or cationic polymerization is not taught. This is entirely incorrect and without merit. The applicant is directed to the use of acrylic monomers, which undergo free radical polymerization and epoxy monomers which undergo cationic polymerization and their different spectral sensitivities as shown in figure 3, which is identical to figure 17 of the instant specification. The fact that they have different spectral sensitivities as evidenced by figure 3 and the disclosure of separate curing of the first monomer in the cited example followed by the simultaneous curing of both meets the limitation

of the claims clearly evidences that the disclosed methods anticipate the broadly claimed invention. The examiner points to the example of section [0034], which specifically describe an acrylic and epoxy monomer mixture. The broadly claimed invention of the cited claims is anticipated by the cited Japanese publication and in the now allowed US application to the same assignee. Drafting the claims of the instant application so that they do not overlap with the disclosures of the cited Japanese publication and the corresponding allowed US application would reduce the issues. The rejection stands.

11. Claims 1-28 and 38-39 are provisionally rejected under 35 U.S.C. 102(e) as being anticipated by copending Application No. 09/534458 which has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the copending application, it would constitute prior art under 35 U.S.C. 102(e), if published under 35 U.S.C. 122(b) or patented. This provisional rejection under 35 U.S.C. 102(e) is based upon a presumption of future publication or patenting of the copending application.

The examiner notes that claims have been indicated as allowable in this application and therefore the presumption of a patent issuing is strong. The Kagami et al. JP 2000-347043 reference is the published Japanese application corresponding to the U.S. application cited.

This provisional rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the copending application was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131. This rejection may not be overcome by the filing of a terminal disclaimer. See *In re Bartfeld*, 925 F.2d 1450, 17 USPQ2d 1885 (Fed. Cir. 1991).

The examiner notes that the rejection is under 102(e) and not limited to merely the claimed subject matter and that the claims seek coverage for similar and overlapping subject matter. Further, the examiner notes that the selective curing is recited in claims 1, 13, 15, 16,17 and 22 of the co-pending application. The examiner notes that the use of epoxies and acrylates is specifically described in the co-pending patent application and therefore the interpretation of the scope of these claims is held embrace the embodiments claimed in the instant application. **The applicant's representative argues that the representative has no way of knowing the contents of the co-pending applicant. The examiner notes that the inventors of that co-pending application are all listed as inventors in the instant application and the applicant bears the burden of disclosure of the co-pending applications.** The applicant is correct in assuming that the disclosure of the Japanese document is equivalent to the US, but the argument that the applicant's representative does not have a copy is should be a moot argument soon as the issue fee has been matched with the file.

12. Claims 1-28 and 38-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kagami et al. JP 2000-347043 or copending Application No. 09/534458, in view of Kawabata et al. '494.

Kawabata et al. '494 teaches the use of cationically curable materials (epoxies) mixed with free radically curable species (acrylates) and the separate curing of one of these via proper wavelength selection to facilitate refractive index imaging. (abstract, 1/31-37 and examples). Specific cationically curable materials include epoxies, polyglycidyl ethers, glycidyl ethers, and others (3/20-64). Useful free radically curable materials include acrylates, methacrylates, and others. (3/65-4/40).

It would have been obvious to use cationically and free radically curable monomers known to be useful in refractive index imaging with selective curing, such as those disclosed by Kawabata et al. '494 in place of the acrylates and epoxies specifically disclosed in the examples of Kagami et al. JP 2000-347043 or copending Application No. 09/534458 with a reasonable expectation of success based upon the disclosure of equivalence in refractive index modulation by Kawabata et al. '494

13. Claims 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 08-320422, in view of Anderson 702 and Kagami et al. JP 2000-347043.

JP 08-320422 teaches coupling various optical elements together, including laser diodes and optical fibers as shown in figures 58 and 62. The use of exposure from both direction is disclosed to facilitate improved coupling (lens like formation). Adjustment of the alignment is not disclosed. Note the disclosure with respect to figure 5.

Anderson '702 establishes that it is old and well known in the art to position the optical fiber for maximum power transfer from the diode laser prior to curing the epoxy using light (4/9-26)

It would have been obvious to one skilled in the art to modify the invention of JP 08-320422 by performing an alignment to maximize coupling efficiency as taught by Anderson '702 as this is old and well known in the art and further, it would have been obvious to one skilled in the art to modify the invention of JP 08-320422 combined with Anderson 702 by using the composition and two step curing of Kagami et al. JP 2000-347043 to improve the refractive index control of the core Vs. the cladding layers.

The applicant's arguments that the references applied are unrelated fails to appreciate the fact that they are all within the filed of fiber optics and waveguiding of light. The exposure from both directions to facilitate curing is not required by the claims and further, the use of two directions for exposure is disclosed by JP 08-320422. The optical transmission module is merely the optical connection between the fiber optical and other optical elements, such as detectors and the like.

14. Claims 1-28 and 38-39 of this application conflict with claims 1-8 and 11 of Application No. 09/534458. 37 CFR 1.78(b) provides that when two or more applications filed by the same applicant contain conflicting claims, elimination of such claims from all but one application may be required in the absence of good and sufficient reason for their retention during pendency in more than one application. Applicant is required to either cancel the conflicting claims from all but one application or maintain a clear line of demarcation between the applications. See MPEP § 822.

15. Claims 1-28 and 38-39 are directed to the same invention as that of claims 1-8 and 11 of commonly assigned 09/534458. The issue of priority under 35 U.S.C. 102(g) and possibly 35 U.S.C. 102(f) of this single invention must be resolved.

Since the U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP § 2302), the assignee is required to state which entity is the prior inventor of the conflicting subject matter. A terminal disclaimer has no effect in this situation since the basis for refusing more than one patent is priority of invention under 35 U.S.C. 102(f) or (g) and not an extension of monopoly.

The examiner notes that the inventors of that co-pending application are all listed as inventors in the instant application and the applicant bears the burden of disclosure of the co-pending applications. Failure to comply with this requirement will result in a holding of abandonment of this application.

The applicant argues that they are not commonly assigned. The examiner points out that the assignees are both divisions of Toyota and that there are inventors in common. If the applicant continues to assert that these are in fact two different entities, then perhaps interference proceedings should occur. The assignees are invited to initiate such a procedure when the other application has issued and the instant claims are otherwise allowable.

16. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

17. Claims 1-28 and 38-39 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-8 and 11 of copending Application No. 09/534458, in view of Houlihan et al. '304 and Kawabata et al. '494.

Houlihan et al. '304 establish that the use of free radical or cationic polymerization is known in the fiber optics filed. (4/63-65)

Although the conflicting claims are not identical, they are not patentably distinct from each other because they seek coverage for the same subject matter, albeit with slight differences in wording and it would have been obvious to use cationically and free radically curable monomers known to be useful in refractive index imaging with selective curing, such as those disclosed by Kawabata et al. '494 with a reasonable expectation of success based upon both free radical and cationic polymerization being known useful curing mechanisms in the fiber optic filed as evidenced by Houlihan et al. '304

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

This patent has been allowed and the applicant is given notice of this. Therefore this rejection may become non-provisional in the near future without affecting the rejections at hand.

18 Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

New claims

19 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J Angebranndt whose telephone number is 571-272-1378. The examiner can normally be reached on Monday-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9309 for regular communications and 703-872-9309 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Martin J Angebranndt
Primary Examiner
Art Unit 1756

February 2, 2004